Navigating breast cancer: axon guidance molecules as breast cancer tumor suppressors and oncogenes.

Journal: J Mammary Gland Biol Neoplasia

Publication Year: 2011

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PubMed link: 21818544

Funding Grants: UCSC CIRM Training Program in Systems Biology of Stem cells

Public Summary:
The roles of Slit, Netrin, Ephrin, and Semaphorin proteins in development have expanded greatly in the past decade from their original characterization as molecules that guide the migration of axons (AGMs) in the embryonic nervous system. These newly discovered functions include roles as regulators of tissue morphogenesis and development in diverse organs. In the mammary gland, AGMs are important for maintaining normal cell proliferation and adhesion during development. The frequent dysregulation of AGM expression during tumorigenesis and tumor progression suggests that AGMs also play a crucial role as tumor suppressors and oncogenes in breast cancer. Moreover, these findings suggest that AGMs may be excellent targets for new breast cancer prognostic tests and more effective therapeutic strategies.

Scientific Abstract:
Slit, Netrin, Ephrin, and Semaphorin's roles in development have expanded greatly in the past decade from their original characterization as axon guidance molecules (AGMs) to include roles as regulators of tissue morphogenesis and development in diverse organs. In the mammary gland, AGMs are important for maintaining normal cell proliferation and adhesion during development. The frequent dysregulation of AGM expression during tumorigenesis and tumor progression suggests that AGMs also play a crucial role as tumor suppressors and oncogenes in breast cancer. Moreover, these findings suggest that AGMs may be excellent targets for new breast cancer prognostic tests and more effective therapeutic strategies.